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Chapter

1

Socio-behavioural aspects of health and illness

Alison Gifford

STUDY POINTS

- The importance of social and behavioural sciences to pharmacy
- The meaning of health and illness
- Changing health-related behaviour and the related models
- How people behave when they are ill
- Behavioural aspects of health care
- Factors affecting the treatment process

Introduction

To develop a full understanding of the use of medicines by individuals and society and the role that pharmacy contributes to health care, an understanding of the sociology and psychology of health is required. These two factors are closely interwoven, and help the pharmacist to understand the influences on an individual's behaviour in relation to their health and any illness they encounter.

In pharmacy practice research, sociological and psychological influences on health have often been under-researched, with research often focused on adherence in a mechanistic manner. However, if pharmacy as a profession wishes to understand and resolve medicine and medicine-related problems, we need to broaden our perspectives to incorporate relevant social and behavioural theory and research.

The purpose of this, and the following chapter, is to provide the reader with a broad overview of the health-related issues from a health sociological and psychological perspective; emphasizing the need to understand the wider influences on individual behaviour in order to enhance

our pharmacy practice. The social sciences have a shared focus on understanding patterns and meaning of human behaviour, which distinguishes them from the physical and biological sciences.

Illness can be perceived as either a solely biophysical state, or a more comprehensive view may be taken, viewing illness as a human societal state where behaviour varies with culture and other social factors. It is argued that viewing illness as purely a malfunction of a physical process or structure underemphasizes the influence of the individual and psychosocial issues on their beliefs, thoughts and behaviour.

Pharmacists have to deal with many social and behavioural issues in their daily work, either directly or indirectly through health-related behaviour. The contribution of social sciences to pharmacy and pharmacy practice can be summarized in the following three areas:

- Analysing the practice of pharmacy – helping to identify important questions relating to the use of medicines, pharmacy practice and the pharmacy profession
- Providing conceptual and explanatory frameworks for understanding human behaviour in a social context
- Providing appropriate approaches to study the use of medicines and the practice of pharmacy.

It is impossible in two chapters to provide a comprehensive review of all the aspects of health sociology and psychology that may be relevant to pharmacy. Instead, the aim is to highlight the relevant key areas that may lead the reader to explore the sociological and psychological literature in more detail; a good starting point is the books and articles on the topic that are included in the further reading (Appendix 4).

This chapter will focus on defining health and illness and exploring the determinants of health and illness for an individual. It is important for a pharmacist to understand

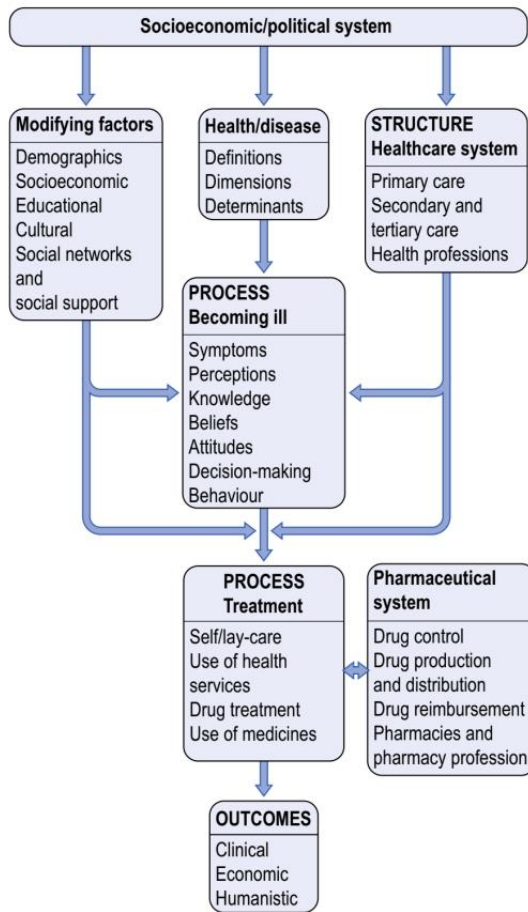


Fig. 1.1 A model of the social and behavioural factors involved in health and illness.

the influences and processes involved in illness behaviour and treatment to enable effective, patient-centred practice. In each area, the major concepts and theories that provide a deeper understanding of health and illness are briefly discussed.

An overall framework is presented in Fig. 1.1.

Defining health and illness

Health and illness mean different things to different people; they are subjective terms, and it is easy to take good health for granted. Commonly, health is seen as the absence of signs that the body is not functioning

properly or absence of symptoms of disease or injury. Health is often perceived as a dichotomy; you are either healthy or you are not, but in reality, health is a continuum of different states, and both societal and individual perceptions influence our understanding of health.

However, disease, in contrast to illness, is something professionally defined. The organization of current health care around the world uses this concept of illness to frame its structures, yet research has shown that physicians and experts vary in their views on both physical and mental disease, such that it is difficult to argue that disease can be easily defined.

In reality, illness is more often a state defined by the individual patient based on their own subjective reaction to a perceived biological alteration of body or mind. It has both physical and social connotations. Our perception of illness is influenced by individual, cultural, social and other factors. Illness is also a socially defined condition, resulting in the individual being assigned a particular social status by other members of their society. Parson's concept of a societal 'sick role' and its effect on illness and health care will be explored in more detail.

It is important to understand that an individual may have a disease and not be ill, might be ill but not have a disease or might have both an illness and a disease.

The most widely used definition of health or wellness is that of the WHO, which states that: 'health is a state of complete physical, mental and social well-being and not merely the absence of diseases and infirmity'. This definition incorporates all aspects of health and although holistic and widely quoted, it is used less by policy makers in the healthcare arena, as it does not provide guidance on which to base funding decisions.

The WHO definition offers a goal for health that is actively sought through positive actions and not merely through a passive process of avoiding disease-causing agents.

Dimensions of health

The WHO definition of health distinguishes between three aspects; physical, mental and social health, but very often healthcare systems use a narrower definition of health incorporating only physical and mental health to focus their resource allocation.

In utilizing the wider definition of health, there is a danger that we begin to 'medicalize' our society – issues such as loneliness, domestic violence and attention deficit

disorder become the responsibility of medicine and public health, when they may not need medical treatment in the way that other diseases require. In opposing the argument, the broad definitions allow us to examine health issues in a holistic manner.

Physical health

Most of us see physical health as being free from pain, physical disability, acute and chronic diseases and bodily discomfort. However, our prior experiences of illness, our age, education and a variety of other personal and social factors will influence our perception of physical health. Health has to be understood to be subjective – what one individual may consider to be poor health may not be perceived as such by another. In dealing with patients and their health, the pharmacist needs to work to understand the individual's perceptions to facilitate effective interactions.

Mental health

Mental health comprises of an individual's ability to deal constructively with reality and to adapt effectively to change, to hold a positive self-image and to cope with stressors and develop intimate relationships. Furthermore, enjoying the pleasures of ordinary life and making plans for the future are important aspects of mental health.

Spiritual health

Spiritual health is considered by some as part of the mental health dimension, while others argue that it is a separate dimension. It should not be confused with religion or religiousness. A sense of spiritual well-being is possible without belonging to an organized religion. Spiritual health has been characterized as the ability to articulate and act on one's own basic purpose of life, giving and receiving love, trust, joy and peace, having a set of principles to live by, having a sense of selflessness, honour, integrity and sacrifice and being willing to help others achieve their full potential. By contrast, negative spiritual health can be described by loss of meaning in one's life, self-centredness, lack of self-responsibility and a hopeless attitude.

Social health

The impact of social health on the well-being of the individual has been widely demonstrated. Social integration, social networks and social support have both direct and indirect influences on health. A low socioeconomic status

defined by educational level, income and occupation is closely related to higher morbidity and mortality.

Determinants and models of health

Throughout history, the concepts of disease have changed. Early explanations involved evil spirits causing disease. Hippocrates (460–370 BC) suggested that the imbalance of the four body fluids caused disease, while during the Middle Ages, illness was seen as God's punishment.

Later in time, in the post-Renaissance period, René Descartes suggested that the body could be viewed as a machine and he theorized how action and sensation occur. In addition, he proposed that the body and mind were separate but could communicate, and that the soul leaves the human body at death.

Since Descartes' time, advances in science have led scientists to develop a more advanced understanding of the working of the body and the processes of illness and disease. The role of microbes and other agents in causing disease is understood, along with the effect of nutrition, hygiene and other lifestyle factors.

The biomedical model of disease proposes that all diseases and illness can be explained by disturbed physiological processes. The disturbances may be caused by injury, biochemical changes and bacterial, viral or fungal infection. This model separates the physical from the psychological and sociological influences on health. The biomedical model has dominated healthcare processes for a significant period of time, but in more recent years, there has been a recognition that it is not possible, or helpful, to separate out the components of an individual's life; the biopsychosocial model incorporates the interplay of biological, psychological and social aspects of a person's life on their health.

Individuals in both industrialized and less developed cultures continue to be influenced in their health behaviours by both cultural and religious beliefs. These may relate to 'bad' behaviour, weather, accidents, black magic, witchcraft, spirits and one or more Gods, to name but a few.

Genetic and biological determinants

In line with scientific developments, current medicine is interested in the genetic basis of disease and it does seem that it may be possible to determine an origin of many health problems in the human genes. Newspapers proclaim each discovery loudly, such as the possibility of genes that predispose to alcoholism and obesity, along with many others. This may lead to the belief that all health problems

develop from a genetic 'fault' and these lie beyond the control of each individual, which may legitimize poor health behaviour. In reality, the picture is more complex, with health, and conversely disease, arising from an interaction of individual genetic, psychosocial and physical factors.

The scientific interest in this field lies in interactions between genetic predisposition and psychosocial factors encountered in early childhood. For example, research has shown that genetically predisposed, spontaneously hypertensive rat pups who were fostered to normotensive mothers did not develop hypertension as they matured, suggesting that genetic predisposition can be overcome by a favourable environment in the early years.

Behavioural determinants

The major leading causes of death in Western society today – heart disease, cancer, stroke and accidents – are all associated with behavioural risk factors. The origin of many chronic diseases such as diabetes and hypertension can be found in lifestyle factors. A sedentary lifestyle predisposes an individual to develop these diseases, regardless of genetic factors. Simple changes to behaviour, such as effective weight control, stopping smoking and regular exercise, will often prevent the onset of diseases such as heart disease and diabetes. It is possible, however, that for some individuals, the inheritance of a protective genetic profile protects them from poor health caused by poor health-related habits.

Health psychology is a branch of psychology focusing on the behavioural and mental processes that contribute to health and illness. It focuses on cognition, emotion and motivation. Cognition involves perceiving, knowing, learning, remembering, thinking, interpreting, believing and problem solving. Emotion is a subjective feeling that affects and is affected by our thoughts, beliefs and behaviour. Emotions can be positive/pleasant or negative/unpleasant. Those individuals whose emotions are more positive have reduced incidence of disease and have much faster recovery times than those whose emotions are more negative. Motivation is the driver for individuals to behave the way that they do, influences individuals adopting new health-related behaviour, and the way they choose to take their medication or otherwise. Health psychology studies the effects of interpersonal relationships on individuals; our interactions with others, their thoughts, feelings and actions, which in turn influence our own thinking and behaviour.

In studying a particular situation, there can be components of cognitive, affective (emotional), behavioural and interpersonal influences and separating these may be difficult. For example, an individual experiencing anxiety in a given situation may think that they lack control

(cognitive), feel fear (affective), experience physical symptoms such as sweating palms and raised heart rate (behavioural) and seek out support and reassurance from others (interpersonal).

One of the major psychological issues that affects health is stress. Stress is an increasing factor in modern lives and arises when an individual experiences a situation in which they perceive that they are not able to cope with what is being asked of them, either physically, emotionally or socially. Due to the interconnection of body and mind, the mental stress causes physical responses, including the release of catecholamines and corticosteroids, which may contribute to illness with continued exposure. The cardiovascular system can be affected and the emotional response to stress can result in anxiety and depression, which in turn have been shown to reduce the effectiveness of the immune system, putting the individual at risk of other diseases.

Stress can also affect an individual's health through altered health-related behaviour. People experiencing high levels of stress often consume more alcohol, drugs and smoke more than those with less stress, and they also experience more accidents.

Stress is therefore of concern when helping individuals to improve their health, and needs to be considered when advising patients in a pharmacy, as it will be affecting their behaviour and thinking.

Environmental determinants

Environmental factors (biological, chemical, physical, mechanical) that affect human health are widely understood and have been studied in detail. External contaminants can enter the body through the air we breathe or the items we ingest, either through direct contamination of food, or indirectly through the food from the soil.

The role of airborne pollen in hay fever, other allergens such as pet dander and dust mites in asthma, and the risks to health from contaminated water are well understood, but there are other contaminants from the environment that need to be considered, such as drug residues in the meat and meat products we eat, that can have an effect on health from the time of conception onwards.

Environmental risk factors can affect a far greater number of people at a given time than more individual factors such as genetic susceptibility or psychological responses. While individual risk factors can account for some of the differences seen in disease occurrence, they cannot account for all. Work to reduce individuals' risk factors for a given disease has only a limited impact on the disease occurrence, and Rose (1985) suggested that the causes of individual differences in disease may be different from the causes of differences between populations. Even where there is a strong

link between a risk factor and the incidence of a disease, the disease may never develop in a particular individual.

Socioeconomic determinants

Socioeconomic determinants of health are socially situated factors that influence health, or may predispose an individual or population to poor health. Each society develops its own set of health-related values, both positive and negative, and these are reflected in the media used within the society. Western society sees being fit and healthy as 'good' and this exemplifies a positive value, while individuals in the public eye seen undertaking activities such as smoking cigarettes or using illegal drugs exemplify a negative value. These societal values influence individuals and the way in which they behave, but the primary influence on an individual's behaviour is often their family.

An individual's family is the closest and most constant social relationship for the majority of people. Therefore we learn and model many of our health-related habits, behaviours and attitudes on those of our close family. The degree of support or encouragement provided by family and friends when an individual undertakes a health-related activity can be an important factor in the potential for success.

The economic situation of an individual has been shown to have a great influence on their health. In developing countries, factors such as poverty, poor nutrition and poor resistance to pathogens are all interrelated in producing poor health status for the population, and in reducing the average life expectancy. Individuals living in the more industrialized, richer countries have improved health and greater life expectancy.

In addition to the international correlation between health and socioeconomics, the relationship between socioeconomic status and ill health can also be seen across the levels of the social hierarchy within a population. Those individuals who are wealthier within a society also have better health. Health is also linked to education, and those with better education levels tend to be healthier – their increased education level may also lead to a better financial situation, and this also correlates to improved health and longevity.

The relationship between socioeconomic status and health may therefore be related more to relative deprivation rather than absolute deprivation. Having less within your own society, even where this does not mean that the individual is deprived of the basic needs for life, or health care, still has a negative impact on your health. Better lifestyle habits may partially explain these social hierarchy differences, with those of a higher socioeconomic status potentially having healthier habits than those from lower socioeconomic groups, but does not provide a full explanation for the observed differences in health.

These differences in social situations that produce an effect on health are referred to as 'health inequalities'. Health inequalities within a society are often targeted with resources and interventions in order to try and produce population-wide improvements and equality in health (see Ch. 42).

Interaction of different factors

It is evident that no single influencing factor provides an explanation for the health of a nation, demographic group or individual. The factors discussed earlier interlink and provide a complex picture in which to determine the defining influences on health. In considering an individual's health and illness, it is necessary to assess the impact of all aspects of a person's life as a total entity – this approach is called *holism*.

There are models that try to describe the interactions between factors influencing health, and one such comprehensive model is the 'nested model of health'. This model consists of two levels of activity: the individual and the community level. The individual level is composed of five different categories:

- Psychosocial environment (e.g. personal relationships, housing)
- Microphysical environment (e.g. chemicals and noise)
- Work environment (e.g. work stress)
- Behavioural environment (e.g. smoking, alcohol use, exercise)
- Ethnicity, class and gender.

These categories are thought to affect each other and to affect and be affected by the individual. The individual level is nested/located in the centre of the community level.

This community level, which is the main focus of health policy decision-makers, is composed of four components:

- The political/economic climate (e.g. unemployment level)
- The macro-physical environment (e.g. air quality)
- Social justice/equity (e.g. social security system)
- Local control/cohesiveness (e.g. local planning efforts).

These four components are interrelated and changes in them are expected to lead to changes in the health of individuals.

This model shows the potential influences on the health of an individual and provides the healthcare professional with an idea of the complexity of the influences on an individual's health status.

Process of illness

Becoming ill

As pharmacists, we need to understand how and why people respond to illness in such differing ways. Health-related

behaviour varies between individuals for all the reasons discussed previously, and this may help to explain the subjective way in which patients respond to seemingly similar symptoms, such as pain or discomfort. In general, individuals perceive themselves as 'well' if they have a feeling of well-being, experience no symptoms and are able to perform normal functions. This is the baseline situation against which any changes in health are measured. As an individual's health status changes, there will be a corresponding change in their health-related behaviour.

Kasl and Cobb in 1966 defined three types of behaviour that characterize three stages in the progress of disease:

- Health behaviour, which refers to 'any activity undertaken by people believing themselves to be healthy for the purpose of preventing disease or detecting it at an asymptomatic stage'
- Illness behaviour, which involves an activity undertaken by people experiencing illness, in order to determine the state of their health and receive appropriate treatment
- Sick-role behaviour, which refers to the activity that individuals, who consider themselves ill, undertake in order to get well.

Health behaviour is undertaken to benefit health, while illness behaviour and sick-role behaviour are aimed at minimizing the effects of illness.

Identifying and reacting to symptoms

Individuals can, and do, react differently to symptoms of disease. Different symptoms may be perceived very differently, depending on the person, setting and situation. A behaviour which in some situations is regarded as normal and natural can, in other situations, be regarded as a sign of illness. For example, being tired after a long day at work or after an exercise session is normal, while continuous tiredness without due cause may be a sign of illness.

We all use our current and past experiences of illness, our social exposure to illness, through family and friends and societal derived values to judge our illness, and these affect our health behaviour. The significance of symptoms is judged according to the degree of interference with normal activities, the familiarity and clarity of symptoms, the person's tolerance threshold, preconceptions about cause and prognoses, and the influence of friends and family. The presence of other stressors and life crises may also make the symptoms appear more severe to the individual. These subjective and psychosocial aspects may exert a greater influence over the individual's decisions and actions than the symptoms themselves.

The way in which an individual experiences illness involves affective and cognitive reactions, resulting in emotional changes in the person as they attempt to understand

the illness. Bernstein and Bernstein have described these emotional reactions to illness and treatment in the following ways:

- Those directly related to illness or treatment, including fear, anxiety and a feeling of damage and frustration caused by loss of pleasure and enjoyment
- Reactions determined primarily by life experience before or during illness, such as anger, dependency and guilt
- Complications such as depression and loss of self-esteem.

These three emotional responses interact to produce the overall response in an individual and produce complex and varied reactions to illness.

In general, women are more likely to interpret discomfort as a medical symptom and they also recall and report more symptoms when consulting a healthcare professional. These differences may partly be explained by a higher interest in and concern with health issues among women.

An individual's family often plays an active role in the symptom identification process, as other family members may recognize some symptoms before the person does. The family also takes part in the interpretation process of symptoms.

The individual's cultural background is also an important factor influencing the process of symptom identification and evaluation. Some cultures more readily describe common symptoms as medical, while others tend to suppress signs of illness. There might also be differences between generations in this respect, in so much as symptoms previously considered as normal may today be seen as something requiring medical attention.

Sick-role behaviour

When people perceive themselves to be sick, they adopt the so-called *sick-role behaviour*; a socially determined role. This includes the following components:

- The patient is not blamed for being sick
- The patient is exempt from work and other responsibilities
- The illness is seen as legitimate as long as the patient accepts that being ill is undesirable
- The patient is expected to seek competent help to get well again.

Not all people follow the patterns of the sick role but it does provide a general framework to help understanding illness behaviour. However, this framework is not able to explain variations within illness behaviour; it is not applicable to chronic disease, where getting better may not be realistic and often does not apply to mental illness. In addition, there may be certain diseases, such as alcoholism,

where there might be unwillingness within society to grant exemptions from blame.

The role of personality in illness

Aspects of an individual's personality have been shown to be associated with illness and poor health. People who have high levels of anxiety, depression and anger/hostility traits seem to be more disease prone than others. Emotions, such as anxiety and depression may be a reaction to different types of stress. People handle stressful situations in different ways and an individual's approach to stress affects the impact of stress on their health. People who approach stressful situations more positively and hopefully are less disease prone and also tend to recover in a shorter time if they get ill. Those who are ill will recover faster if they can overcome their negative thoughts and feelings.

Friedman and Rosenman in 1974 described differences in behavioural and emotional style, and their effects on health, when studying the behaviour of cardiac patients. They named the behaviour patterns they saw as 'Type A' and 'Type B'.

The Type A behaviour pattern is characterized by:

- A competitive achievement orientation, with high levels of self-criticism and striving towards goals while not experiencing a sense of joy in achievements
- Time urgency, e.g. tight scheduling of commitments, impatience with time delays and unproductive time
- Anger/hostility which is easily aroused. Type A individuals respond faster and with more emotion to stress, often seeing stressors as threats to their personal control – this behaviour seems to be particularly detrimental to health.

The Type A pattern may also increase the person's probability of getting into stressful situations. The relationship between Type A behaviour and psychosocial factors is very complex. Type B individuals take life more easily with little competitiveness, time urgency and hostility.

Interestingly, the overall evidence for an association between Type A and Type B behaviour and general illnesses is weak and inconsistent. However, many studies have shown a clear association between Type A behaviour and coronary heart disease.

Health knowledge, beliefs and attitudes

The concept of health knowledge may include a variety of components such as beliefs, expectations, norms and cognitive perceptions. Health knowledge is therefore more than merely having some factual knowledge about diseases and treatment.

Knowledge about a disease can improve a patient's health by improving their problem-solving capacity.

Preventive behaviours, participation in the treatment process and taking medications all require a certain amount of knowledge. The current trend emphasizing guided self-care in chronic diseases such as asthma, diabetes and hypertension, requires a well-informed patient. The aim is to produce patients who actively participate in their own treatment. The starting point is providing the necessary information and improving the factual knowledge of the patient. It has been shown, however, that knowledge alone is insufficient to ensure behaviour change, which is often the goal.

In addition to improving patients' knowledge, there also needs to be a change in attitude in order for them to undertake new health-related behaviours. Attitudes have been defined as states of readiness or predisposition (feelings for or against something) which predisposes to particular responses. They involve emotions (feelings) and knowledge (or beliefs) about the object and result in behaviour changes. Attitudes are not inherited but learned and, though relatively stable, are modifiable by education.

There are a number of models and theories that have been suggested to explain the interaction between knowledge, beliefs, attitudes and behaviour in health.

The health belief model

The health belief model, developed by Rosenstock and colleagues in 1966 to predict the use of preventive health services, has been extensively used during the last two decades to try to explain various health behaviours. The model has been further developed to predict health behaviour in chronic diseases and compliance with healthcare regimens.

According to the model, the probability that a person will take a preventive health action – that is, perform some health, illness or sick-role behaviour – is a function of:

- Their perception of their own susceptibility to the health problem or disease. (How likely am I to get it?)
- Their perception of the severity of medical and social consequences of the disease. (How ill would it make me?)
- Their perception of the benefits and barriers (costs) related to the recommended behaviour. (What will I gain and what will it cost me?)

All three of these aspects are based on subjective perceptions which can be modified, at least in theory.

According to the model, the more vulnerable the person feels and the more serious the disease, the more likely it is the person will act. Various factors that result from the perceptions are expected to modify this motivating force. These factors include demographic, socioeconomic and therapy-related factors as well as the illness itself and the prescribed regimen. Prior contact with the disease or knowledge about the disease may modify the behaviour. Some incidents, so-called 'cues to action', are also expected

to trigger the desired behaviour. These cues to action might include a mass media campaign, magazine article, advice from others or illness of a family member.

The concept of perception is important in the health-belief model. It is the patient's and not the pharmacist's perceptions that drive the decisions and behaviours of the patient. Once an individual has been diagnosed with an illness, then their concept of personal susceptibility has been modified because they know they have an illness. Studies into health belief try to overcome these issues by examining the individual's estimate of or belief in the accuracy of the diagnosis. This concept has also been extended to measuring the individual's subjective feelings of vulnerability to various other diseases or to illness in general. Studies show that in hypertension, for example, the threat posed by hypertension and the perceived effectiveness of treatment in reducing this threat are important predictors of compliance. Likewise, the perceived control over one's own health is important. There is some controversy about the chronology of these beliefs and whether they precede or develop simultaneously with health behaviour.

The health belief model and common sense might tell us that the patient's decision to seek health care, accept a diagnosis and engage in health-related behaviours would be related to the seriousness of the disease. Research indicates this may not always be the case. Patients' health behaviours are a function of many psychosocial variables. (Reasons why humans may behave illogically are dealt with later in 'The conflict theory' and 'Decision analysis and behavioural decision theory').

The theory of planned behaviour

The theory of planned behaviour offers an explanation of the factors that help to determine an individual's health-related behaviour. The actions of each individual are determined by their intention to perform, or not, any particular action; and their intention is determined by both personal and social influences. Two personal influences exert an effect on an individual's intentions. The first is 'attitudinal considerations', which are related to the individual's beliefs in the positive or negative effects of their behaviour, i.e. will it make me better or not? The second is the individual's perception of the ease or difficulty of performing the action, their 'perceived behavioural control'. The social influences, or 'subjective norm' relate to the pressure from the society in which they are present to undertake the behaviours or otherwise. The pressure exerted by the normative beliefs acts independently of the individual's personal beliefs, and so may be in opposition to them. So in the case of individuals contemplating changing their behaviour, their own opinions on the new behaviour, and the illness it may avoid, will exert an influence over the chances of them undertaking the new behaviour, as will their perception of

the difficulty or ease of doing this new activity or acting in a new way. They will also be affected by how their friends, family and society see the new behaviour; if positive and a good idea, then the individual is more likely to undertake it, while if they get negative comments these may justify not undertaking the new behaviour. In a situation where there is a conflict between the attitudinal considerations on one side, and the perceived behavioural control and subjective norms on the other, the action itself helps to determine which takes precedence in determining action or non-action.

The theory of planned behaviour proposes that the subjective norm and the attitude regarding the behaviour combine to produce an intention, which leads to the behaviour.

If behaviour is determined by beliefs, then what factors determine beliefs? Factors such as age, sex, education, social class, culture and personality traits all influence an individual's beliefs. These variables influence behaviour indirectly rather than directly. One of the problems with the theory is that people do not always do what they plan, i.e. intentions and behaviour are only moderately related. Another problem is that people do not always act rationally. Irrational decisions such as delaying medical treatment when symptoms exist cannot be explained by the model. Neither does the model include prior experiences with the behaviour, which might be an important factor to consider, since past behaviour is a strong predictor of future practice of that behaviour.

The conflict theory

The conflict theory has been used to explain rational and irrational decision-making. According to the model, how a person arrives at a health-related decision involves five stages. It starts when something challenges the person's current course of action. It can be a threat (e.g. symptom) or a mass media alert about, for example, the danger of narcotics or an opportunity (e.g. free membership to a health club). The different stages of the conflict theory model are:

- Assessing the challenge, i.e. whether the risk is serious enough. The assessment may involve thoughts such as the risk is not real, it is irrelevant or inapplicable. If the risk is not considered serious enough, the behaviour continues as before and the decision-making process stops
- Assessing alternatives, i.e. the search for alternatives for dealing with the risk starts when the risk is acknowledged. This stage ends when the suitability of available alternatives has been surveyed
- Weighing alternatives, i.e. the pros and cons of each alternative are weighed to find the best option
- Making a final choice and committing to it
- Adhering despite negative feedback, i.e. after starting a new behaviour people may have second thoughts about